DETAILED ACTION

Acknowledgement of Applicant's Amendments

1. The amendments made in all pending claims (except claim 28) in the Amendment filed January 22, 2008 has been received and considered by Examiner.

WITHDRAWN REJECTIONS

2. All rejections made of record in the previous Office Action mailed June 14, 2007 have been withdrawn due to Applicant's amendment in claims 1 and 39.

REPEATED OBJECTIONS

3. The objection to claim 43 made of record in the previous Office Action mailed June 14, 2007 has been repeated for the reasons previously made of record.

NEW REJECTIONS

Claim Rejections - 35 USC § 103

4. Claims 1-12, 22 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedrick et al. (USPN 4,424,254) in view of Sobolev (USPN 5,030,488).

In regard to claims 1 and 5, Hedrick et al. teach a laminate comprising two metal sheets and a high-density polyethylene core between, and attached to, the metal sheets (col. 2, lines 15-20). Hedrick et al. teach that a suitable metal for at least one (col. 15, lines 52-64) of the metal sheets is steel (col. 21, lines 47-58). Hedrick et al. teach that the laminate is suitable for concrete construction panels (col. 1, lines 39-50, col. 3, lines 47-57 and col. 4, line 20).

Hedrick et al. fail to explicitly teach that the panel thickness is greater than 7 mm. Hedrick et al. also fail to explicitly teach that a plurality of the panels are connected together to form a concrete formwork.

Hedrick et al., however, disclose that the laminate has an improved combination of service properties considered important and critical for demanding construction applications such as inner and outer building panels (col. 1, lines 39-45 and col. 3, lines 51-57). Hedrick et al. disclose that, in addition to the critical properties deemed necessary for the construction applications, the laminate also has a wide range of additional desirable properties such as high heat distortion temperature, excellent deep-draw, simple-bend and formability at elevated temperatures, very good ductility, and very good energy absorption ability (including resistance to denting) (col. 1, lines 51-58). Hedrick et al. disclose that the laminate has a thickness ratio of the sum of the thicknesses of the metal layers to the thickness of the thermoplastic core layer that is selected to achieve an optimum combination of properties (col. 3, lines 59-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the thickness of the high-density polyethylene core layer of the panel of Hedrick et al. in order to achieve the desired combination of critical properties deemed necessary for the construction applications and of additional desirable properties, such as, for example, very good strength in flexure (the thicker a panel is, the higher the strength in flexure), and as another example, very good energy absorption ability (the more material that the panel is comprised of, the greater ability the panel would have to absorb energy [such as impact energy, col. 4, lines 12-14], so the thicker the high-density polyethylene core layer, the greater ability the panel would have to absorb energy), depending on the particular desired end result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). MPEP 2144.05 II.B.

Sobolev, furthermore, teaches a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that suitable metals for the metal sheets are aluminum and steel (col. 9, lines 27-50 and col. 19, lines 47-50). Sobolev teaches that the laminate is used as wall/structural/architectural panels or as the laminate for concrete pouring forms (col. 3, lines 21-25, 52 and 60). Sobolev teaches that it is common to join several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and that conventional rivets or other types of mechanical fasteners are used to fasten the plurality of panels together (col. 33, lines 56-57). Therefore, one of ordinary skill in the art at the time the invention was made would have recognized to have joined several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and to have used conventional rivets or other types of mechanical fasteners are to have fastened the plurality of panels together, since it is well known to join several laminate panels, where the panels have uses in construction such as concrete pouring forms as taught by Sobolev.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have joined several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and to have used conventional rivets or other types of mechanical fasteners are to have fastened the plurality of panels together, since it is well known to join several laminate panels, where the panels have uses in construction such as concrete pouring forms as taught by Sobolev.

In regard to claims 2 and 3, Hedrick et al. fail to explicitly teach that the panel thickness is from 9 to 15 mm thick (as claimed in claim 2) or 12 mm (as claimed in claim 3).

Hedrick et al., however, disclose that the laminate has an improved combination of service properties considered important and critical for demanding construction applications such as inner and outer building panels (col. 1, lines 39-45 and col. 3, lines 51-57). Hedrick et al. disclose that, in addition to the critical properties deemed necessary for the construction applications, the laminate also has a wide range of additional desirable properties such as high heat distortion temperature, excellent deep-draw, simple-bend and formability at elevated temperatures, very good ductility, and very good energy absorption ability (including resistance to denting) (col. 1, lines 51-58). Hedrick et al. disclose that the laminate has a thickness ratio of the sum of the thicknesses of the metal layers to the thickness of the thermoplastic core layer that is selected to achieve an optimum combination of properties (col. 3, lines 59-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the thickness of the high-density polyethylene core layer of the panel of Hedrick et al. in order to achieve the desired combination of critical properties deemed necessary for the construction applications and of additional desirable properties, such as, for example, very good strength in flexure (the thicker a panel is, the higher the strength in flexure), and as another example, very good energy absorption ability (the more material that the panel is comprised of, the greater ability the panel would have to absorb energy [such as impact energy], so the thicker the high-density polyethylene core layer, the greater ability the panel would have to absorb energy), depending on the particular desired end result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). MPEP 2144.05 II.B.

In regard to claim 4, Hedrick et al. teach that, with regard to construction panels, "the lighter the laminate, the more desirable it becomes" (col. 9, lines 57-61, which refers to the "critical service properties" of the laminate with regard to construction panels, col. 1, lines 39-45).

Hedrick et al. fail to teach that a panel of Hedrick et al. having the recited dimensions has the claimed maximum weight.

Sobolev, however, teaches a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that suitable metals for the metal sheets are aluminum and steel (col. 9, lines 27-50 and col. 19, lines 47-50). Sobolev teaches that the laminate is used as wall/structural/architectural panels or as the laminate for concrete pouring forms (col. 3, lines 21-25, 52 and 60). Sobolev teaches that the plastic core is a foam (col. 4, lines 44-45 and col. 12, lines 3-38). Since Hedrick et al. teach that, with regard to construction panels, "the lighter the laminate, the more desirable it becomes", one of ordinary skill in the art would have recognized to have used a foamed high-density polyethylene as the high-density polyethylene of the panel of Hedrick et al. in order to achieve a lighter panel (such as a panel having a weight that is less than a certain desired weight, depending on the desired end result, such as the maximum weight recited in claim 4), since it is well known to use foamed plastic as the resin layer of a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets that is used as

wall/structural/architectural panels or as the laminate for concrete pouring forms as taught by Sobolev.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a foamed high-density polyethylene as the high-density polyethylene of the panel of Hedrick et al. in order to achieve a lighter panel (such as a panel having a weight that is less than a certain desired weight, depending on the desired end result, such as the maximum weight recited in claim 4), since it is well known to use foamed plastic as the resin layer of a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets that is used as wall/structural/architectural panels or as the laminate for concrete pouring forms as taught by Sobolev.

In regard to claims 6-8, as stated above in regard to claims 1 and 5, Hedrick et al. teach that a suitable metal for at least one (col. 15, lines 52-64) of the metal sheets is steel (col. 21, lines 47-58). Hedrick et al. teach that each metal layer has a thickness of at least about 0.00127 cm (0.0005 inch): the thicknesses claimed in claims 6-8 all are greater than 0.0005 inch, so the thicknesses claimed in claims 6-8 all fall within the suitable thickness values of the metal (steel) layers taught by Hedrick et al.

In regard to claim 9, since Hedrick et al. teach that “aluminum is not the metal layer on both sides of the [high-density polyethylene core layer]” (col. 2, lines 15-20 [that both metal layers cannot be aluminum layers]), Hedrick et al. teach that one of the metal layers is an aluminum layer.

In regard to claim 10, Hedrick et al. teach the panel as discussed above in regard to claim 1. Hedrick et al. teach that, with regard to construction panels, “the lighter the laminate, the more desirable it becomes” (col. 9, lines 57-61, which refers to the “critical service properties” of the laminate with regard to construction panels, col. 1, lines 39-45).

Hedrick et al. fail to teach that the high-density polyethylene plastic is foam plastic.

Sobolev, however, teaches a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that suitable metals for the metal sheets are aluminum and steel (col. 9, lines 27-50 and col. 19, lines 47-50). Sobolev teaches that the laminate is used as wall/structural/architectural panels or as the laminate for concrete pouring forms (col. 3, lines 21-25, 52 and 60). Sobolev teaches that the plastic core is a foam (col. 4, lines 44-45 and col. 12, lines 3-38). Since Hedrick et al. teach that, with regard to construction panels, “the lighter the laminate, the more desirable it becomes”, one of ordinary skill in the art would have recognized to have used a foamed high-density polyethylene as the high-density polyethylene of the panel of Hedrick et al. in order to achieve a lighter panel, since it is well known to use foamed plastic as the resin layer of a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets that is used as wall/structural/architectural panels or as the laminate for concrete pouring forms as taught by Sobolev.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a foamed high-density polyethylene as the high-density polyethylene of

the panel of Hedrick et al. in order to achieve a lighter panel, since it is well known to use foamed plastic as the resin layer of a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets that is used as wall/structural/architectural panels or as the laminate for concrete pouring forms as taught by Sobolev.

In regard to claims 11 and 12, Sobolev teach that a filler is used in the plastic (resin) core layer of the panel to lower the density of the core and that the filler is a foaming agent or blowing agent conventionally used to foam various resins as known by those skilled in the art or glass microballoon filler having an average diameter of from about 20 microns to about 12 mm (col. 12, lines 3-16). Sobolev teaches that for lower density cores and lighter weight laminates, the microballoons and foaming agents are the preferred density lowering agents. Sobolev teach that the specific gravity of the resin core, which is equivalent to the density of the core layer, should be set in a range from about 0.8 to about 1.3. Sobolev teaches the variation of the density of the core layer via routine experimentation via control of the volume of gas per unit volume of the core layer via use of glass microballoons of a given size or of foaming agents conventionally used to foam resins known by those skilled in the art. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to have varied the size of the microballoon filler, and therefore the “gas by volume” value of the foam plastic, or to have experimented with different foaming agents and different amounts of a given foaming agent as known by those of ordinary skilled in the art as taught by Sobolev, via routine experimentation in order to achieve the optimal “gas by volume” amount as claimed by Applicants, i.e. volume of gas per unit volume of the core layer expressed as a percentage, that achieves the desired weight

of the laminate taught by Hedrick et al. and Sobolev, depending on the desired end result as taught by Sobolev, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). MPEP 2144.05 II.B.

In regard to claim 22, Hedrick et al. fail to teach the structural limitations recited in claim 22.

Sobolev teaches that the facing has a recessed and a raised portion forming a design (see Fig. 8A, as can been seen most readily at the bottom left-hand corner of Fig. 8A- the metal facing layer is clearly contoured and there is therefore a recessed and a raised portion forming a design. Concrete would be impressed in the panel having a recessed and a raised portion forming a design shown in Figure 8A since Sobolev teaches that the panel is used as a concrete formwork panel (col. 3, lines 47-62). Therefore, one of ordinary skill in the art would have recognized to have formed a recessed or a raised portion forming a design in the panel of Hedrick et al. since it well known to form construction panels/panels of concrete pouring forms having a recessed or a raised portion in order to form a design as taught by Sobolev.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a recessed or a raised portion forming a design in the panel of Hedrick et al. since it well known to form construction panels/panels of concrete pouring forms having a recessed or a raised portion in order to form a design as taught by Sobolev.

In regard to claim 25, Hedrick et al. teach that the metal layers are bonded to the plastic core with an adhesive (col. 33, lines 4-17).

In regard to claim 26, as stated above in regard to claim 1, Sobolev teaches that conventional rivets or other types of mechanical fasteners are used to fasten the plurality of panels together (col. 33, lines 56-57), so the formwork taught by Hedrick et al. and Sobolev comprises the claimed plurality of fasteners.

In regard to claims 27 and 28, Hedrick et al. fail to teach the structural limitations recited in claims 27 and 28.

In regard to claims 27 and 28, Sobolev teaches that the panels are fastened to a steel or aluminum frame (col. 2, lines 23-26 and col. 33, lines 66-68). Therefore, one of ordinary skill in the art at the time the invention was made would have recognized to have fastened the several panels to a steel or aluminum frame since it is well known to fasten several construction panels/panels of concrete pouring forms to a steel or aluminum frame as taught by Sobolev.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have fastened the several panels to a steel or aluminum frame since it is well known to fasten several construction panels/panels of concrete pouring forms to a steel or aluminum frameas taught by Sobolev.

5. Claims 14-17 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedrick et al. (USPN 4,424,254) in view of Sobolev (USPN 5,030,488) and in further in view of Fitzgerald et al. (USPN 4,842,241).

Hedrick et al. and Sobolev teach the claimed formwork as discussed above.

In regard to claims 14-17, Hedrick et al. fail to teach that each panel is bent to form a flange (as claimed in claim 14), that the flange has openings formed in it (as claimed in claim 15), that the panel is notched at the bend (as claimed in claim 16) or that the bend is a 90° bend

(as claimed in claim 17). Fitzgerald et al., however, disclose a panel with V-shaped cross sections 20 and 22 (i.e. notches) where the panel is bent 90° to form a mold with side walls (i.e. flanges) 12 and 14 (col. 3, lines 9-29 and Figures 1, 2 and 6). Fitzgerald et al. disclose openings 42 and 44 formed in flange 12 and openings 46 and 48 formed in flange 14 for removable pins to assure maintaining the assembled state of the mold (col. 3, lines 53-60 and Figures 2 and 6). Therefore, one of ordinary skill in the art would have recognized to have provided a 90° bend in the panel of Hedrick et al. via a notch in order to form a flange and to further provide openings in the flange, since it is well known in the art to bend concrete form mold panels via a notch and to provide openings in the resulting flanges in order to assure maintaining the assembled state of the mold via pins as taught by Fitzgerald et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a 90° bend in the panel of Hedrick et al. via a notch in order to form a flange and to further provide openings in the flange, since it is well known in the art to bend concrete form mold panels via a notch and to provide openings in the resulting flanges in order to assure maintaining the assembled state of the mold via pins as taught by Fitzgerald et al.

In regard to claims 39-41, Sobolev teaches a laminate comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that the laminate is used as panels for concrete pouring forms (col. 3, lines 21-25 and line 60). Sobolev teaches that the plastic core is a foam (col. 4, lines 44-45 and col. 12, lines 3-38).

Sobolev, furthermore, teaches a laminate having improved properties such as impact resistance and other structural properties (col. 3, lines 25-30) comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that

suitable metals for the metal sheets are aluminum and steel (col. 9, lines 27-50 and col. 19, lines 47-50). Sobolev teaches that the laminate is used as wall/structural/architectural panels or as the laminate for concrete pouring forms (col. 3, lines 21-25, 52 and 60). Sobolev teaches that it is common to join several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and that conventional rivets or other types of mechanical fasteners are used to fasten the plurality of panels together (col. 33, lines 56-57). Therefore, one of ordinary skill in the art at the time the invention was made would have recognized to have used to have joined several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and to have used conventional rivets or other types of mechanical fasteners are to have fastened the plurality of panels together, since it is well known to join several laminate panels, where the panels have uses in construction such as concrete pouring forms as taught by Sobolev.

Sobolev fails to explicitly teach that the foam plastic is 30% to 70% gas, by volume (as claimed in claim 39), or 40% to 70% gas, by volume (as claimed in claim 40) or 50% to 70% gas, by volume (as claimed in claim 41). However, Sobolev teach that a filler is used in the plastic (resin) core layer of the panel to lower the density of the core and that the filler is a foaming agent or blowing agent conventionally used to foam various resins as known by those skilled in the art or glass microballoon filler having an average diameter of from about 20 microns to about 12 mm (col. 12, lines 3-16). Sobolev teaches that for lower density cores and lighter weight laminates, the microballoons and foaming agents are the preferred density lowering agents. Sobolev teach that the specific gravity of the resin core, which is equivalent to the density of the core layer, should be set in a range from about 0.8 to about 1.3. Sobolev teaches the variation of the density of the core layer via routine experimentation via control of

the volume of gas per unit volume of the core layer via use of glass microballoons of a given size or of foaming agents conventionally used to foam resins known by those skilled in the art. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to have varied the size of the microballoon filler, and therefore the "gas by volume" value of the foam plastic, or to have experimented with different foaming agents and different amounts of a given foaming agent as known by those of ordinary skilled in the art as taught by Sobolev, via routine experimentation in order to achieve the optimal "gas by volume" amount as claimed by Applicants, i.e. volume of gas per unit volume of the core layer expressed as a percentage, that achieves the desired laminate weight depending on the desired end result as taught by Sobolev, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). MPEP 2144.05 II.B.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hedrick et al. (USPN 4,424,254) in view of Sobolev (USPN 5,030,488) in view of Fitzgerald et al. (USPN 4,842,241) and in further view of Toedter (USPN 3,654,053).

Hedrick et al., Sobolev and Fitzgerald et al. teach the concrete formwork as discussed above in regard to claim 14. Fitzgerald et al. further teach that the panel includes a panel end and is bent twice to form a first bend and a second bend (see Figures 1, 2 and 6).

Hedrick et al., Sobolev and Fitzgerald et al fail to teach that the second bend is closer to the panel end than the first bend and that the second bend is substantially 180° so that the panel is bent back on itself to form a double-thick flange.

Toedter, however, discloses a panel (work sheet, item 200) that is bent back on itself to form a double-thick panel (col. 3, lines 21-39 and Fig. 1, 8 and 10). Toedter discloses that the panel is bent back on itself via grooves (items 222 and 223), that are structurally equivalent to the grooves (items 20 and 22) of Fitzgerald et al., to form the second bend that is substantially 180° as claimed by Applicant (col. 3, line 41-col. 4, line 40) and to form the double-thick flange as claimed by Applicant. The structure taught by Toedter that is equivalent to the second bend claimed by Applicant is closer to the panel end (free edge surface, item 3252, Fig. 4, col. 6, lines 62-63) than the first bend that is made at grooves 220 and 221 as shown in Fig. 11. Toedter discloses that this panel structure results in a building element that has, weight for weight, a greater resistance to crush and shear exerting forces than other known building elements (col. 1, lines 47-65).

Therefore, one of ordinary skill in the art would have recognized to have formed the flange (items 12 or 14) of Fitzgerald et al. such that the second bend of the flange (item 12 or 14) is closer to the panel end than the first bend and such that the second bend is substantially 180° so that the panel is bent back on itself to form a double-thick flange since it is well known to form double-thick building elements with two bends wherein the second bend is closer to the end of the building element than the first bend and the second bend is substantially 180° so that the element is bent back on itself to form a double-thick building element in order to enhance the resistance to crush and shear exerting forces of the building element as taught by Toedter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the flange (items 12 or 14) of Fitzgerald et al. such that the second bend of the flange (item 12 or 14) is closer to the panel end than the first bend and such that the

second bend is substantially 180° so that the panel is bent back on itself to form a double-thick flange since it is well known to form double-thick building elements with two bends wherein the second bend is closer to the end of the building element than the first bend and the second bend is substantially 180° so that the element is bent back on itself to form a double-thick building element in order to enhance the resistance to crush and shear exerting forces of the building element as taught by Toedter.

7. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedrick et al. (USPN 4,424,254) in view of Sobolev (USPN 5,030,488) and in further view of Lee (USPN 6,295,786).

Hedrick et al. and Sobolev teach the concrete formwork as discussed above in regard to claim 1.

Hedrick et al. fail to teach that each panel is bent into a hollow, columnar form (as claimed in claim 19) where the columnar form is cylindrical (as claimed in claim 20).

Lee, however, teach a building panel in a form for building columns, where the core is cylindrical (col. 2, lines 60-65). Therefore, one of ordinary skill in the art would have recognized to have bent each panel of Hedrick et al. into a hollow columnar form where the columnar form is cylindrical, since it is well known to bend panels into columnar and cylindrical form in order to use the panels to build columns as taught by Lee.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have bent each panel of Hedrick et al. into a hollow columnar form where the columnar form is cylindrical, since it is well known to bend panels into columnar and cylindrical form in order to use the panels to build columns as taught by Lee.

8. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedrick et al. (USPN 4,424,254) in view of Sobolev (USPN 5,030,488) and in further view of Gallis et al. (USPN 4,473,209).

Hedrick et al. and Sobolev teach the concrete formwork as discussed above in regard to claim 1.

Hedrick et al. fail to teach that each panel includes a strengthening rib attached to the metal backing layer as claimed in claim 23 and that it includes a handhold as claimed in claim 24.

Gallis et al., however, disclose a concrete wall form assembly having two modular units, each of which consists of stiffening ribs 16a-c for the modular unit 11a and stiffening ribs 16d-f for modular unit 11b (col. 2, lines 41-51 and Figure 1). Gallis et al. disclose that modular units 11a and 11b are provided with a pair of handles 19 which facilitates lifting of the complete unit during erection and dismantling, and that the handles 19 are fixed to the second and sixth ribs of each unit (col. 2, lines 62-67). Therefore, one of ordinary skill in the art would have recognized to have attached a strengthening rib to the metal backing layer of the panels of Hedrick et al. in order to strengthen (i.e. stiffen) the panel as taught by Gallis et al., and to have provided a handhold such as the handles of Gallis et al. in order to facilitate lifting of the form assembly during erection and dismantling as taught by Gallis et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have attached a strengthening rib to the metal backing layer of the panel of Hedrick et al. in order to strengthen (i.e. stiffen) the panels as taught by Gallis et al., and to have provided

a handhold such as the handles of Gallis et al. in order to facilitate lifting of the form assembly during erection and dismantling as taught by Gallis et al.

9. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev (USPN 5,030,488) in view of Hedrick et al. (USPN 4,424,254).

Sobolev teach the concrete formwork as discussed above in regard to claim 39. Sobolev teaches that the laminate is used as wall/structural/architectural panels or as the laminate for concrete pouring forms (col. 3, lines 21-25, 52 and 60).

Sobolev fails to teach that the plastic of the plastic core is high-density polyethylene.

Hedrick et al. teach a laminate comprising two metal sheets and a high-density polyethylene core between, and attached to, the metal sheets (col. 2, lines 15-20). Hedrick et al. teach that a suitable metal for at least one (col. 15, lines 52-64) of the metal sheets is steel (col. 21, lines 47-58). Hedrick et al. teach that the laminate is suitable for concrete construction panels (col. 1, lines 39-50, col. 3, lines 47-57 and col. 4, line 20). Hedrick et al., however, disclose that the laminate has an improved combination of service properties considered important and critical for demanding construction applications such as inner and outer building panels (col. 1, lines 39-45 and col. 3, lines 51-57). Therefore, one of ordinary skill in the art would have recognized to have used high-density polyethylene as the plastic resin of Sobolev since high-density polyethylene is a well known suitable plastic for use as the resin of a plastic layer of a laminate having improved properties considered important and critical for demanding construction applications such as inner and outer building panels that comprises two metal sheets and a plastic core between and bonded to the metal sheets that is used as construction panels as taught by Hedrick et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high-density polyethylene as the plastic resin of Sobolev since high-density polyethylene is a well known suitable plastic for use as the resin of a plastic layer of a laminate having improved properties considered important and critical for demanding construction applications such as inner and outer building panels that comprises two metal sheets and a plastic core between and bonded to the metal sheets that is used as construction panels as taught by Hedrick et al.

Response to Arguments

10. Applicant's interview summary on page 6 of the Amendment filed October 11, 2007 has been considered by Examiner.

It was not understood by the Examiner that the following statements were handled in the manner expressed in Applicant's response filed October 11, 2007. Instead, the Examiner has the following recollection of the events.

The Examiner did not state that limiting the claims to 40% foam plastic and above "would make the claims patentable". The Examiner indicated that further consideration would have to be given to this limitation before making any determination that the claims would be patentable.

Applicant's Representative states that "The Examiner remarked that none of the SPEs involved in reviewing this case had ever had a concrete formworks application either". The Examiner did not make this "remark". The Examiner did indicate, however, that the art/s in which the 1770 art units examine cover a wide range of different applications, where multilayered articles and/or laminates are common applications examined in the 1770 art units.

The intent of the Examiner in indicating this was to indicate that, since applications from many different areas are examined in the 1770 art units, the number of concrete formworks applications that the Examiner, and the 1770 SPEs, examine is/would be very small relative to the total number of applications examined, and that there is not an area in the 1770 art units that is devoted to solely concrete formworks applications. Examiner also notes that throughout the prosecution history of the application (up until the Amendment filed October 11, 2007), claim 1 has been drawn to a panel, and not to a concrete formworks.

11. Applicant's arguments presented on page 7 of the Amendment filed October 11, 2007 regarding the 35 U.S.C. 103 rejection over Hedrick made of record in the previous Office Action are moot due to the withdrawal of this rejection in this Office Action due to Applicant's amendments in claim 1.

12. Applicant's arguments presented on pages 7-9 of the Amendment filed October 11, 2007 regarding the 35 U.S.C. 103 rejection over Hedrick in view of Sobolev (as this rejection now applies to the rejection of claim 1 made of record in this Office Action) have been fully considered but are not persuasive.

Applicant has admitted that Sobolev teach the panels of Sobolev are suitable for "concrete formworks" ("Sobolev adds to Hedrick a weak suggestion that metal/plastic panels can be used for concrete formworks", page 7 of Amdt.; "Sobolev's disclosure that the panel can be used for concrete pouring forms is *di minimus*", page 8 of Amdt.). Regardless of how weak or *de minimus* Applicant considers Sobolev's teaching of concrete pouring forms that "can be used for concrete formworks" (Applicant's words, page 7 of Amdt.) to be, Applicant has admitted that Sobolev teaches that the "panels [of Sobolev] can be used for concrete formworks" (Applicant's

words). An admission that a teaching of X in a reference is *de minimus* is an admission that that reference teaches X. Applicant has equated "concrete pouring forms" with "concrete formworks" ("Sobolev adds to Hedrick a weak suggestion that metal/plastic panels can be used for concrete formworks", page 7 of Amdt.), so Applicant has admitted that Sobolev teaches that the "panels [of Sobolev] can be used for concrete formworks"

On the bottom of page 7, Applicant refers to examples of Sobolev, but Sobolev is not relied upon for a teaching of the components of the panels, but only for a teaching that it is known to have joined several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and to have used conventional rivets or other types of mechanical fasteners are to have fastened the plurality of panels together, since it is well known to join several laminate panels, where the panels have uses in construction such as concrete pouring forms as taught by Sobolev. See rejection of claim 1 made of record in this Office Action.

Applicant argues that Sobolev must disclose tests for testing the performance of concrete formworks for Sobolev to actually teach "concrete pouring forms", but the explicit disclosure of Sobolev of "concrete pouring forms" is sufficient for a teaching of "concrete pouring forms".

Applicant refers to the previously filed declarations under 37 CFR 1.132. These declarations have been addressed in previous Office Actions. Furthermore, these declarations are directed to Sobolev, but Sobolev is not relied upon for a teaching of the components of the panels, but only for a teaching that it is known to have joined several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and to have used conventional rivets or other types of mechanical fasteners are to have fastened the plurality of panels together, since it is well known to join several laminate panels, where the panels have uses in construction such as

concrete pouring forms as taught by Sobolev. See rejection of claim 1 made of record in this Office Action.

13. Applicant's arguments presented on pages 9-10 of the Amendment filed October 11, 2007 regarding the 35 U.S.C. 103 rejection over Hedrick in view of Fitzgerald (as this rejection now applies to the rejection of claims 14-17 and 39-41 made of record in this Office Action) have been fully considered but are not persuasive. The structure taught in Fitzgerald et al. corresponds to the relevant claimed structure for the reasons of record.

14. Applicant's arguments presented on page 10 of the Amendment filed October 11, 2007 regarding the 35 U.S.C. 103 rejection over Hedrick in view of Fitzgerald in view of Toedter (as this rejection now applies to the rejection of claim 18 made of record in this Office Action) have been fully considered but are not persuasive. The structure taught in Toedter corresponds to the relevant claimed structure for the reasons of record.

15. Applicant's arguments presented on pages 10-11 of the Amendment filed October 11, 2007 regarding the 35 U.S.C. 103 rejections of claims 19, 20, 23 and 24 depend entirely upon Applicant's arguments regarding the rejection of claim 1, which have been addressed above in this Office Action.

16. Applicant's arguments presented on page 11 of the Amendment filed October 11, 2007 regarding the 35 U.S.C. 103 rejection over Sobolev (as this rejection now applies to the rejection of claims 39-41 made of record in this Office Action) have been fully considered but are not persuasive. The Office, in previous Office Actions, has repeatedly addressed Applicant's argument that 27% is the highest value disclosed by Sobolev by stating that Sobolev does not

teach 27% as the maximum value. The reasons why one of ordinary skill in the art would have recognized to have increased the value over 27% are of record.

17. Applicant's arguments presented on pages 11-12 of the Amendment filed October 11, 2007 regarding the 35 U.S.C. 103 rejection of claim 42 depend partially upon Applicant's arguments regarding the rejection of claim 39, which have been addressed above in this Office Action. Applicant also argues that Hedrick does not teach that using HDPE is "more useful for concrete", but since Hedrick teach that the laminate is suitable for concrete construction panels (col. 1, lines 39-50, col. 3, lines 47-57 and col. 4, line 20), Hedrick et al. teaches that using HDPE as the material of the polymeric layer is useful "for concrete".

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is (571) 272-1488. While the examiner sets his work schedule under the Increased Flexitime Policy, he can normally be reached on Monday-Friday from 8:45am to 5:15pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris, can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Walter B Aughenbaugh /
Patent Examiner, Art Unit 1794

4/14/08